

08/14/00



jc907 U.S. PTO

Attorney Docket No.: 3COM-2399.CTO

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application

 jc886 U.S. PTO
 09/639713
 08/14/00

I hereby certify that this transmittal of the below described documents is being deposited with the United States Postal Service in an envelope bearing Express Mail Postage and an Express Mail label, with the below serial number, addressed to the Commissioner of Patents and Trademarks, Washington, D.C., 20231, on the below date of deposit.			
Express Mail Label No.:	EK381944641US	Name of Person Making the Deposit:	ANTHONY CHOU
Date of Deposit:	08/14/00	Signature of the Person Making the Deposit:	<i>Anthony Chou</i>

Inventor(s): Ismail Dalgic and Vipin Jain

Group Art Unit:

Filed: 08/14/00

Examiner:

 Title: METHOD AND SYSTEM FOR PROVIDING SECURE USER ACCESS TO PUBLIC OR PRIVATE
 TELEPHONE AND INTERNET SYSTEMS

 The Commissioner of Patents and Trademarks
 Washington, D.C. 20231
 Sir:

Transmittal of a Continuation-in-Part Patent Application

Transmitted herewith is the above identified patent application, including:

- ☒ Specification, claims and abstract, totaling 22 pages.
- ☐ Formal drawings, totaling _____ pages.
- ☒ Informal drawings, totaling 3 pages.
- ☒ Copy of Petition for Extension of Time to provide copendency in the parent application.
- ☐ Form 1449
- ☐ Information Disclosure statement
- ☐ Assignment(s)
- ☐ Assignment Recordation Form (duplicate)
- ☒ Declaration / Power of Attorney
- ☐ A certified copy of priority application: _____
- ☐ Other: _____

PRIORITY CLAIM

A. 35 U.S.C 119

The prior U.S. application(s), including any prior International Application designating the U.S., identified above, in turn itself claim(s) foreign priority(ies) as follows:

country	application no.	filed on
The certified copy(ies) has (have)		
<input type="checkbox"/>	been filed on _____	in prior application _____
	which was filed on _____	
<input type="checkbox"/>	is are attached _____	

☐ Amend the specification by inserting, before the first line, the following sentence:

B. 35 U.S.C. 119(e)

 "This application claims the benefit of U.S. Provisional Application(s) No(s).:
 APPLICATION NO(S): _____ FILING DATE _____

C. 35 U.S.C. 120, 121 and 365(c)

"This application is a continuation-in-part of and claims the benefit of copending application(s)

☒ application number 09/181,431 filed on 10/30/98
☐ International Application _____ filed on _____

and which designated the U.S."

INVENTORSHIP STATEMENT

☒ This application discloses and claims additional disclosure by amendment and a new declaration /oath is being filed. With respect to the prior application, the inventor(s) in this application are

☐ the same.

☒ the following additional inventor(s) have been deleted
Peter Si-Sheng Wang

☒ the following additional inventor(s) have been added
Vipin Jain

FEES DUE

The fees due for filing the specification pursuant to 37 C.F.R. § 1.16 and for recording of the Assignment, if any, are determined as follows:

CLAIMS					
	NO. OF CLAIMS		EXTRA CLAIMS	RATE	FEES
Basic Application Fee					\$690.00
Total Claims	19	Minus 20=	0	X \$18 =	\$0.00
Independent Claims	3	Minus 3=	0	X \$78 =	\$0.00
If multiple dependent claims are presented, add \$260.00					\$0.00
Add Assignment Recording Fee of \$40.00 If Assignment document is enclosed					\$0.00
TOTAL APPLICATION FEE DUE					\$690.00

PAYMENT OF FEES

1. The full fee due in connection with this communication is _
provided as follows:
- [x] The Commissioner is hereby authorized to charge any additional fees associated with this
communication or credit any overpayment to Deposit Account No.: 23-0085.
A duplicate copy of this authorization is enclosed.
- [x] A check in the amount of \$690.00
- [] Charge any fees required or credit any overpayments associated with this filing to Deposit Account No.:
23-0085.

Please direct all correspondence concerning the above-identified application to the following address:

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Respectfully submitted,

Date: Aug 14, 2000

By: 

Anthony C. Murabito
Reg. No. 35,295

3COM-2399.CTO

UNITED STATES PATENT APPLICATION FOR

METHOD AND SYSTEM FOR
PROVIDING SECURE USER ACCESS TO PUBLIC OR
PRIVATE TELEPHONE AND INTERNET SYSTEMS

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METHOD AND SYSTEM FOR
PROVIDING SECURE USER ACCESS TO PUBLIC OR
PRIVATE TELEPHONE AND INTERNET SYSTEMS

5 BACKGROUND OF THE INVENTION

Related Applications

 The present application is a continuation in part of copending U.S. patent application Serial No. 09/181,431, METHOD, APPARATUS AND COMMUNICATIONS SYSTEM FOR COMPANION INFORMATION AND

10 NETWORK APPLIANCES, Wang, Peter Si-Sheng, Dalgic, Ismail, filed 10/30/98, and incorporated herein by reference for all purposes. The following copending U.S. patent application Serial No. 08/866,819, METHOD AND APPARATUS FOR PROVIDING SECURITY IN A STAR OR HUB NETWORK CONNECTION, Jain, Nessel, Sherer, filed 5/30/97, and U.S. patent application Serial No.

15 08/955,869, METHOD AND APPARATUS FOR PROVIDING SECURITY IN A STAR NETWORK CONNECTION USING PUBLIC KEY CRYPTOGRAPHY, Jain, Nessel, Sherer, filed 10/28/97 are incorporated herein by reference.

FIELD OF THE INVENTION

 The present invention relates to improvements in networked computer

20 environments and has particular applications to the transmission of information between digital devices over a communications medium. More specifically, the present invention relates to the combination of a portable computer with a

communications device to form a compound network apparatus used to provide secure and authenticated access to public or private telephone and internet systems.

RELATED ART

- 5 Recent advances in the manufacture and design of integrated circuits have enabled technology producers to provide portable instruments including palm-sized computers [or personal digital assistants (PDAs)], such as the Palm VII from Palm Computing, Inc., Santa Clara, CA. Accessories are available that allow a portable computer to become part of a telecommunications device.
- 10 One such accessory is described in U.S. Patent No. 5,606,594, granted to Register et al. on February 25, 1997, entitled "Communication Accessory and Method of Telecommunicating for a PDA". Similarly, U.S. Patent No. 5,497,339, granted to Bernard et al. on March 5, 1996 provides for PDA that mounts within a communications device. A prior system describes an information appliance
- 15 (PDA) and a network appliance (or telephone) that function independently as well as with each other as companion appliances.

- In prior art, a communications appliance (digital telephone or ethernet telephone) is connected directly to the Local Area Network (LAN), and the information appliance (computer or PDA) is connected directly to the
- 20 communications appliance. That is, the communications appliance is always connected between the LAN and the information appliance (they are connected in series). Both system security means as well as types and methods of data

transmission are limited by the capabilities of the communications appliance (telephone). This topology limits the application to systems requiring ethernet telephones or other specially adapted telephones. Thus prior art excludes applications which could possibly incorporate an existing public switched
5 telephone network (PSTN).

Prior attempts to solve PDA-based number portability and mobility problems, as well as problems of authentication, accounting and billing support for LAN telephones has been based on the use of calling cards, some of which require the user to recall a Personal Identification Number (PIN).

SUMMARY OF THE INVENTION

Accordingly, what is needed is a more generally applicable system that can be used in business or industry without the requirement of special
5 telephones. In the present invention, both the information appliance (computer or PDA) and the communications appliance (an ethernet telephone) are connected directly to the LAN. A non-ethernet telephone can be connected directly to the LAN by connecting a Voice Over IP Gateway between the
10 telephones and in addition allows the application of any of the various security schemes disclosed in the above cited U.S. patent applications, Serial No. 08/866,819, and Serial No. 08/866,819. Furthermore, the types and means of data transmission are limited by the information appliance (a computer or PDA) rather than by the telephone.

15 What is needed yet is a method and system that is economically feasible for use in either private or commercial LAN or internet systems, whether connected by coaxial cable, by twisted pair wire commonly known as CAT5, by fiber optic cable, by wireless means or by some combination thereof.

What is described is a public telephone and Internet access system that
20 comprises Personal Digital Assistants (PDA) that are connected to an ethernet Local Area Network (LAN) by a network cradle, and a number of ethernet telephones connected to the same LAN. Even though we describe the process

in terms of ethernet LANs, the mechanisms apply to other 802 LANs as well. the PDAs store encrypted information about their owners, including the owner's name, their phone forwarding preferences, access permissions to the network, and charging/billing information. When a PDA is attached to a network cradle, 5 this information is automatically transferred to the gate keeper, which is a server that performs management tasks for the ethernet phone network. These tasks include deciding whether or not a user is allowed to sign up and use a public ethernet phone, maintaining billing and charging information, and forwarding incoming calls for a given user to the ethernet phone at the user's current 10 location.

The present invention provides these advantages and others not specifically mentioned above but described in the sections to follow.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a generalized topology for a typical LAN.

Figure 2 is a generalized topology to illustrate one possible embodiment
5 of this invention and is included for clarity of discussion. It will be apparent to those of skill in the art that this invention has applications with many different topologies and therefore should not be seen as limited by this topology.

Figure 3 is a state diagram illustrating steps of the authentication process in accordance with an embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

In the following detailed description of the present invention, a method and system to provide secure user access to public or private telephone systems and the internet, numerous specific details are set forth in order to provide a thorough understanding of the present invention. However, it will be obvious to one skilled in the art that the present invention may be practiced without these specific details. In other instances well known methods, procedures, components, and circuits have not been described in detail so as not to unnecessarily obscure aspects of the present invention.

Networking Devices and Standards

This specification assumes familiarity with the general concepts, protocols and devices currently used in Local Area Networks (LANs) and Wide Area Networks (WANs) such as the IEEE 802.x and ISO 8802 protocol suites and other series of documents released by the Internet Engineering Task Force that are publicly available. For discussion purposes, a generalized topology for a typical LAN (40) is given in Fig.1. LAN topology refers to the manner in which the hardware elements comprising the network are interconnected. Common topologies for LANs are bus, tree, ring and star. LANs may also have a hybrid topology made up of a combination of these. Overall, the LAN in Fig.1 has a tree topology, but also incorporated is 72d having a bus topology and 70d having

a star topology. The present invention may be used with any of the above mentioned topologies including a ring topology.

The LAN in Fig.1 represents an arrangement of various hardware and software elements that operate together to allow a number of digital devices to exchange data within the LAN, and also may include internet connections to external WANs such as WAN 82 and 84. Connection to a Public Switched Telephone Network (PSTN) can be provided by a Voice over IP Gateway that might be included in WAN2. The typical LAN is comprised of one or more LAN Intermediate Systems (ISs) such as ISs 60-62 and 67 that are responsible for data transmission throughout the LAN and a number of End Systems (ESs) such as ESs 50a-f, 51a-c, and 52a-g, that represent end user equipment. The ESs may be familiar end-user data processing equipment, such as personal computers, Personal Digital Assistants (PDAs), workstations, printers and additionally other digital devices such as digital telephones or real-time video displays. Different types of ESs can operate together on the same LAN. In the LAN topology of Fig.1, ISs 60 and 61 are referred to as *bridges*, WAN ISs 64 and 66 are referred to as *routers*, and IS 67 is referred to as a *repeater*. The LAN network topology in Fig.1 is of a general nature for discussion purposes, and this invention is not limited in application to this topology.

A *segment* is generally a single interconnected medium such as a coaxial cable, a contiguous wire(s), optical fiber or a particular frequency band. The LAN in Fig.1 has *segments* 70a-g, 71a-e, 72a-e and 73a. A *segment* may

connect just two devices, such as *segment 70a* (also referred to as a point-to-point or star connection). A *segment* such as 72d may connect a number of devices using a Carrier Sense Multiple Access/ Collision Detection (CSMA/CD) protocol or other multiple access protocol such as a token bus or token ring.

- 5 Signals transmitted on a single *segment* such as 72d are simultaneously heard by all of the ESs and ISs connected to that *segment*.

A LAN may also contain a number of repeaters, such as repeater 67. A repeater generally physically repeats out of each of its ports all data received on any one port, such that the network behavior perceived by ESs 50a-c and the
 10 port of IS 60 connected to 67 is identical to the behavior these ports would perceive if they were all connected on the same *segment* such as 52d-g and the corresponding port of 62. Repeaters configured in a *star* topology such as 67 are also referred to as *hub* repeaters. The terms *hub* or *star* are used in networking to indicate either a switch/bridge layer 2 device, or a repeater layer 1
 15 device. In the Fig.1 LAN, bridges 61, 62, and 63 have a *star* or *hub* configuration as does repeater 67.

Drivers and Adapters

Each of the ISs and ESs in Fig.1 includes one or more *adapters* and hardware or software instructions sometimes referred to as *drivers*. An adapter
 20 generally includes circuitry and connectors for communication over a segment and translates data from the digital form used by the computer circuitry in the IS or ES into a form such as electrical or optical signals, or radio waves that may be

transmitted over the segment. An ES such as 50b will generally have one adapter for connecting to its single segment. A LAN IS such as 61 will have five adapters, one for each segment to which it is connected. A driver is a set of instructions resident on a device that allows the device to accomplish various tasks as defined by different network protocols. Drivers are generally software programs stored on the ISs or ESs in a manner that allows the drivers to be modified without modifying the IS or ES hardware.

Network ISs: Routers, Bridges, Repeaters

The LAN in Fig.1 includes *bridges* 60-63. A bridge is understood in the art to be a type of computer optimized for very fast data communication between two or more segments. A bridge according to the prior art generally makes no changes to the data packets it receives on one segment before transmitting them on another segment.

A LAN may also contain a number of *repeaters*, which is one possible configuration for device 67. A repeater generally repeats out of each of its ports all data received on any one port, such that the network behavior perceived by ESs such as 50a-c is generally identical to the behavior they would perceive if they were connected on the same segment such as 52d-g.

It is intended that this invention be applicable in such instances as private businesses, educational institutions, government organizations as well as in configurations available to the general public. One possible embodiment of this invention is illustrated by the topology in Fig.2. The LAN network (100) is a

generalized representation as discussed previously within which are various hardware and software elements that operate together to allow a number of digital devices to exchange data within the LAN, and also to exchange data with external devices such as ESs, routers or WANs. Numerous different topologies
5 within the LAN are appropriate for this invention and thus the segments between hardware elements within the LAN are omitted. One embodiment utilizes telephones connected to an Ethernet LAN. Other embodiments are realized by means of other 802 LANs.

A method and system are disclosed that will allow access to a LAN for the
10 purpose of local communication within the LAN, for local or long distance telephone communication by connection to a Public Switched Telephone Network (PSTN), or for communication by connection to the internet. System security is incorporated since user access to the LAN is granted only after a requesting user and any connected equipment are identified and authenticated.
15 Once any request is authenticated and user access is allowed to the LAN, any disruption to the connection between that equipment and the LAN will be recognized by the LAN, and such equipment will immediately be denied access to the LAN. Furthermore, the present invention provides additional system security by incorporating a method to detect and immediately disconnect from
20 previously authenticated equipment that exhibits any operational variation(s) unfamiliar to the LAN. An embodiment of this invention consists of a LAN, with a dedicated server called a Gatekeeper (110), a Router (120) to connect the LAN

to the Internet, a gateway (130) used to connect the LAN to a Public Switched Telephone Network (PSTN) (131), and one or more telephone booths (PBs) (140, 150) each of which contains a telephone and a PDA cradle. The PDA cradle is the device used to connect the PDA to the LAN. Each PB connects to
 5 the LAN by means of a hub/switch (Bridge/Switch) (IS). PBs 140, 150, 160 and 170 are connected directly to IS-1(141), IS-2(151), IS-3(161) and IS-4(171) respectively.

Phone booths 140 and 150 each contain an Ethernet phone, which is identical to a regular telephone in appearance and basic functionality, but has a
 10 connector for ethernet as opposed to an analog or digital phone line. Both ethernet phones are connected directly to the LAN. Phone booth 140 also contains a PDA cradle that has an ethernet interface, but phone booth 150 contains a serial cradle to accommodate a PDA having a serial interface such as RS-232. The cradle in phone booth 140 is connected directly to the LAN, while
 15 the cradle in phone booth 150 connects directly to the LAN by means of the serial-to-network converter. It is also possible to use other non-ethernet interfaces such as parallel or Universal Serial Bus (USB), or infrared.

Phone booth 160 contains a non-ethernet telephone which is connected to Bridge/Switch IS-3 by means of a Voice Over IP Gateway, while the ethernet
 20 cradle is connected directly to Bridge/Switch IS-3. Phone booth 170 also contains a non-ethernet telephone which is connected to Bridge/Switch IS-4 by

means of a Voice Over IP Gateway, and the serial cradle is connected to Bridge/Switch IS-4 by means of a Serial-to-Network Converter.

If the user in the phone booth does not have a PDA with the appropriate software, the system allows only toll-free calls, including calling card access numbers and emergency 911 calls. In order to make full use of the system, the user must have a PDA that fits in the cradle, and that has the phone management software. When the user drops his/her PDA in the network cradle and activates the phone management software, the network cradle receives the user's authentication and billing information from the PDA software and sends a message to the hub/switch to which it is connected. The hub/switch then communicates with the gatekeeper (110) to check the user's credentials, and if they are satisfactory, allows network connectivity for the network cradle and permits the phone to make toll calls. If the booth includes a serial cradle, then the serial cradle and serial-to-network converter performs the same function as the network cradle to exchange authentication information with the hub/switch.

Figure 3 provides a state diagram illustrating the authentication process in accordance with an embodiment of the present invention. Authentication is initiated by the hub/switch when it detects a connection on a port (detection of a linkbeat or observance of a message)(step 200). Alternatively, the network cradle, serial-to-network converter, or serial cradle indicates to the hub/switch to initiate authentication when a device is plugged in. This indication can be a physical signal (turning the linkbeat off momentarily) or a message to this effect.

The hub/switch uses a backend AAA infrastructure through the gatekeeper to authenticate the connecting user as described in previously cited patent applications Serial No. 08/866,819, and Serial No. 08/866,819. More specifically, the hub/switch will request certain user data such as user

- 5 identification (ID) and password (PW) (step 201) from the PDA. At this point (step 202), the PDA provides information to the hub/switch.

The information supplied by the PDA is then forwarded by the hub/switch to the gatekeeper for user identification and authentication (step 203). If the user is authenticated successfully (step 204) and the user has a dedicated link to the

10 hub/switch port (via a network cradle for example) (step 200), the hub/switch port is opened (step 205) and a success message is sent to the network cradle (step 206). The network cradle now allows the user to make phone calls. If the switch port is shared (via a serial-to-network converter supporting multiple serial ports for example), a message is sent by the hub/switch to the cradle/converter to

15 open up the corresponding serial port. If the user authentication fails (204), the hub/switch port is blocked (dedicated port) (205) or a failure message is sent to the cradle/converter (206) to block the corresponding serial port. A failure message is displayed to the user on the PDA (206).

The above process can be extended to shared switch ports via network

20 cradles as well (multiple network cradles connected to a switch port via a repeater). In this case, the authenticator (hub/switch) indicates to the authenticating network cradle to open/block the network port based on the

results of authentication. The authenticator can also install filters to allow/disallow traffic from the corresponding MAC addresses.

Advantages of the present invention include portability of numbers. An authenticated user can simply drop the PDA into a cradle and begin making toll
5 phone calls at the push of a button. A phone number stored in the PDA address book can be dialed automatically by the PDA. The graphical user interface on the PDA can display information such as callee's phone number and name, duration and cost of an ongoing call and a history of calls made. The phone booth can be extended into a virtual office since the PDA can communicate the
10 user's phone number to the gatekeeper, and set up automatic call forwarding such that the calls made to the user's office number are forwarded to the ethernet phone at the phone booth.

Furthermore, the PDA can be used to access the internet, allowing applications such as World Wide Web and e-mail to be executed on the PDA. A
15 user can be given the option to carry a voice conversation over the public internet, thereby reducing the toll costs. Moreover, in this case, the long distance charges can be directly paid to the organization providing the toll booths, which may include places such as airport, restaurant or hotel installations. Such organizations are thereby offered an economic benefit.

20 The preferred embodiment of the present invention, a method and system to provide secure user access to public or private telephone systems and the internet, is thus described. While the present invention has been described in

particular embodiments, it should be appreciated that the present invention should not be construed as limited by such embodiments, but rather construed according to the below claims.

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CLAIMS

What is Claimed is:

1. A data system comprising:

5 a local area network (LAN) comprising a hub/switch and coupled to a server, said LAN for coupling with a Public Switched Telephone Network for communication therewith;

an ethernet phone coupled to communicate with said LAN;

a cradle for receiving a portable computer system and also coupled to communicate with said LAN without going through said phone;

10 wherein said hub/switch is for detecting a connection to a portable computer system and for performing authentication in response thereto;

wherein said cradle for receiving user authentication data from said portable computer system and transmitting said user authentication data to said server; and

15 wherein said server is for opening a port on said hub/switch allowing said ethernet phone to communicate voice data over said LAN and also allowing said cradle access to said LAN provided said authentication is successful and otherwise for causing said hub/switch to block said ethernet phone and said cradle from accessing said LAN.

20

2. A data system as described in Claim 1 further comprising a serial to LAN converter and wherein said cradle is coupled to a serial port of said serial to

LAN converter and wherein said serial to LAN converter is coupled to said hub/switch of said LAN.

3. A data system as described in Claim 1 further comprising a Voice
5 Over IP Gateway and a non-ethernet telephone and wherein said non-ethernet telephone is coupled to said Voice Over IP Gateway and wherein said Voice Over IP Gateway is coupled to said hub/switch of said LAN.

4. A data system as described in Claim 1 wherein said server utilizes
10 backend AAA infrastructure to perform said authentication.

5. A data system as described in Claim 1 wherein said connection is detected by a linkbeat signal.

6. A data system as described in Claim 1 wherein said user
15 authentication data comprises a user identity and user billing information.

7. A data system as described in Claim 1 wherein said user authentication data is encrypted.

20 8. A data system as described in Claim 1 wherein said portable computer system is a personal digital assistant (PDA).

9. A data system as described in Claim 1 wherein said portable computer system comprises a display screen for displaying status information regarding said authentication.

5 10. A data system as described in Claim 1 wherein said ethernet phone and said cradle are located in proximity to each other within a phone booth.

11. A method of performing authentication within a data system
 10 comprising the steps of:

- a) placing a portable computer system into a cradle, said cradle associated with an Ethernet phone;
- b) detecting a connection to said portable computer system in response to said step a), said step b) performed by a hub/switch of a local area network
 15 (LAN) that is connected to a Public Switched Telephone Network;
- c) in response to said step b), a server of said LAN causing said cradle to access user authentication data of said portable computer system and to transmit said user authentication data to said server;
- d) performing user authentication based on said user authentication data;
- 20 e) provided said user authentication is successful, said server opening a port on said hub/switch for allowing said Ethernet phone to communicate voice data over said LAN and also allowing said cradle access to said LAN; and

f) provided said user authentication is not successful, said server blocking said Ethernet phone and said cradle from accessing said LAN.

12. A method as described in Claim 11 further comprising the step of
5 said cradle communicating with said LAN using a serial interface coupled to a serial to LAN converter that is coupled to said hub/switch of said LAN.

13. A method as described in Claim 11 wherein said step d) comprises
the step of using backend AAA infrastructure to perform said user authentication.
10

14. A method as described in Claim 11 wherein said step b) is
performed using a linkbeat signal.

15. A method as described in Claim 11 wherein said user
authentication data comprises a user identity and user billing information.
15

16. A method as described in Claim 11 wherein said portable computer
system is a personal digital assistant (PDA).

17. A method as described in Claim 11 wherein said portable computer
20 system comprises a display screen and further comprising the step of displaying status information regarding said user authentication.

18. A method as described in Claim 11 wherein said Ethernet phone and said cradle are located in proximity to each other within a phone booth.

19. A system for network security comprising:

5 a server for storing data that defines users and equipment authorized to access said network;

a cradle for receiving a PDA;

a phone associated with said cradle;

10 a direct connection through the network and bypassing the phone between the server and the PDA;

wherein said server is for comparing the stored data with authentication data from the PDA;

15 wherein said server is also for granting user access to the system when comparison of said stored data with said PDA data provides user and equipment authentication;

wherein said server is also for denying user access to the system when comparison of said stored data with said PDA data fails to provide user and equipment authentication;

ABSTRACT OF THE INVENTION

A public telephone and Internet access system that comprises Personal Digital Assistants (PDA) that are connected to an ethernet or other Local Area Network by a network cradle, and a number of ethernet telephones connected to

5 the same Local Area Network. The PDAs store encrypted information about their owners, including the owner's name, their phone forwarding preferences, access permissions to the network, and charging/billing information. When a PDA is attached to a network cradle, this information is automatically transferred to the gatekeeper, which is a server that performs management tasks for the

10 ethernet phone network. These tasks include deciding whether or not a user is allowed to sign up and use a public ethernet phone, maintaining billing and charging information, and forwarding incoming calls for a given user to the ethernet phone at the user's current location. This invention provides a secure method for the PDA and the gatekeeper to exchange authentication information.

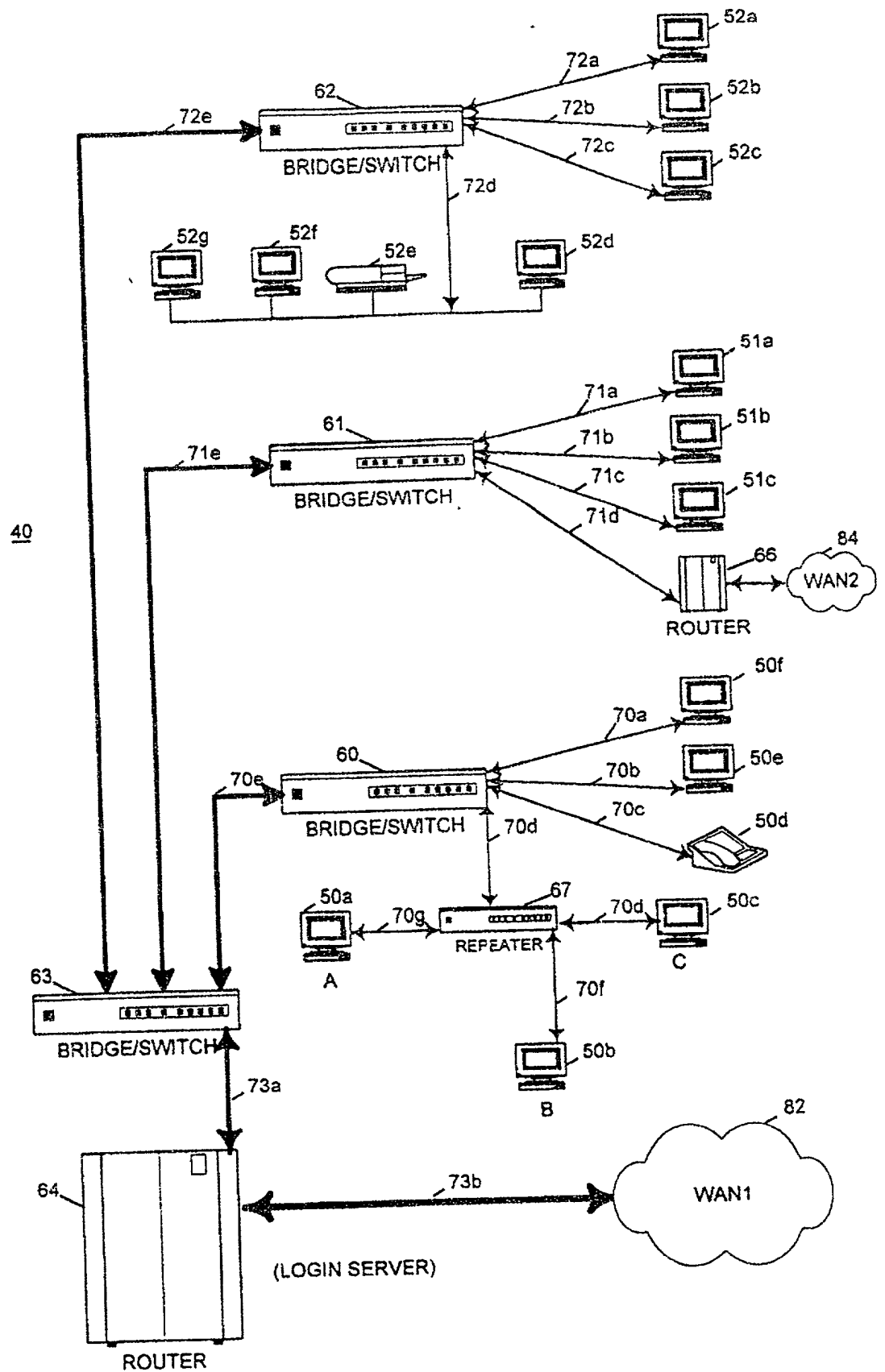


FIG. 1

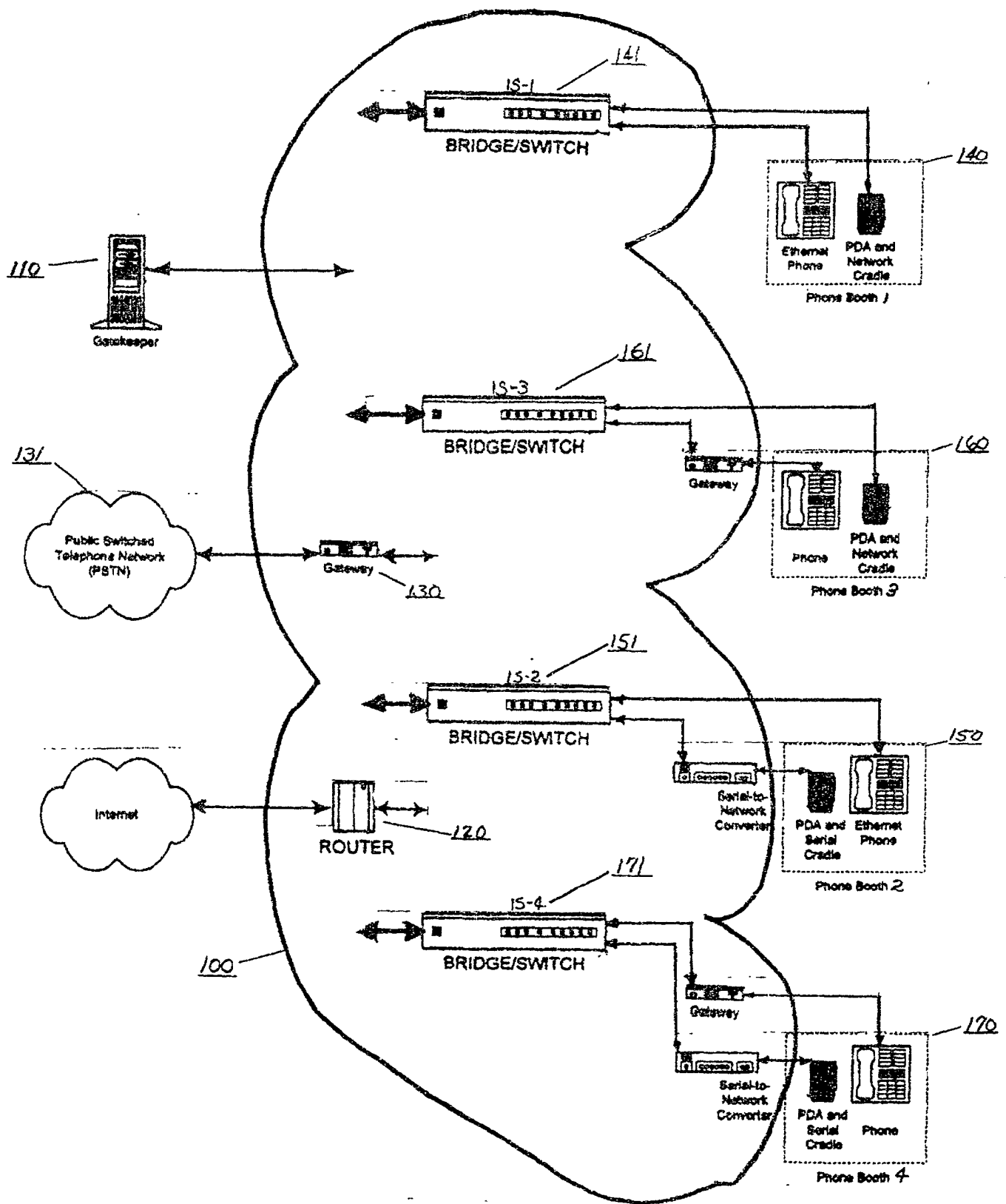


FIG. 2

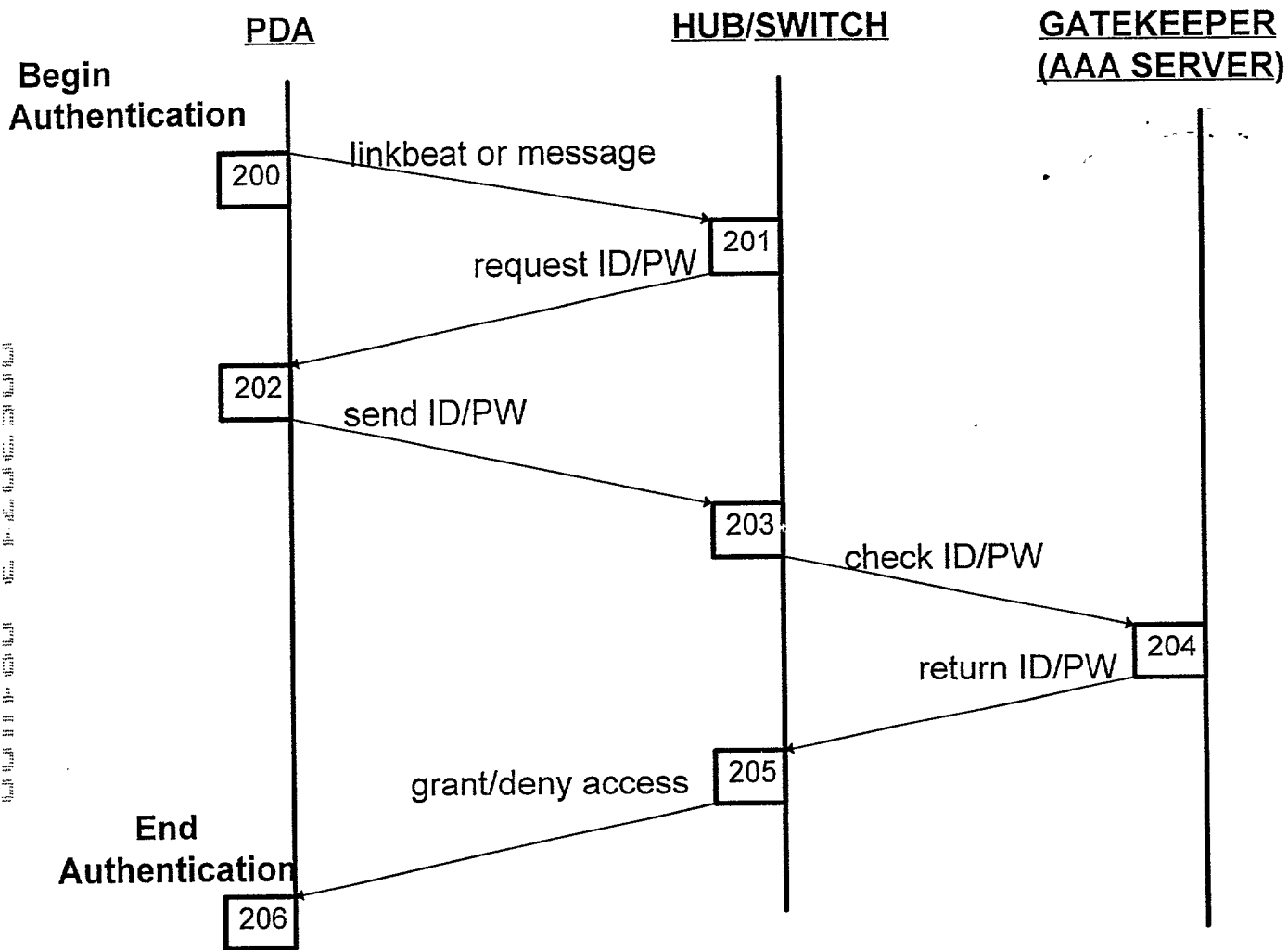


FIG.3

Declaration and Power of Attorney for a Patent Application

Declaration

As below named inventor, I hereby declare that my residence post office address, and citizenship are as stated below my name. Further, I hereby declare that I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

METHOD AND SYSTEM FOR PROVIDING SECURE USER ACCESS TO PUBLIC OR PRIVATE
TELEPHONE AND INTERNET SYSTEMS

the specification of which:

☒ is attached hereto, or
..... was filed on as application serial no. : and
..... was amended on

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above; and

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

Foreign Priority Claim

I hereby claim foreign priority benefits under Title 35, United States Code Section 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Number	Country	Date Filed	Priority Claimed
.....	yes no
.....	yes no

U.S. Priority Claim

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Serial Number	Filing Date	Status (patented/pending/abandoned)
09/181,431	10/30/98	pending
.....

Power of Attorney

As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent Trademark Office connected therewith.

James P. Hao	Registration No.: 36,398
Anthony C. Murabito	Registration No.: 35,295
John P. Wagner	Registration No.: 35,398
Glenn D. Barnes	Registration No.: 42,293
Rick G. Brewster	Registration No.: 35,077
Thomas M. Catale	Registration No.: 46,434
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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